

The Degrees of Progress in an L2 Learner's Pronunciation of /t/ and /æ/

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Introduction

Wong (1985) compares pronunciation teaching today to “a luxury” (p.225). She explains that explicit instruction is rarely given in many programs, though the neglect of pronunciation may have serious consequences for L2 learners in the U.S. However, native-like pronunciation seems to be a more expensive luxury to most L2 learners of English. Derwing (2003) found that an overwhelming majority of Canadian adult L2 learners considered speaking with native-like pronunciation to be a desirable goal, though Derwing and Munro (2005) admit that a very small number of highly motivated adult learners with special aptitude may achieve native-like speech patterns (p. 384). They also comment that studies of the learners after early childhood who achieved this goal are exceedingly rare. Ioup (2008) acknowledges the importance of very early onset for native-like pronunciation (p. 47). She also points out that one of the most important individual variables in adult L2 learners is the learners' aptitude for oral mimicry. What then should adult late L2 learners without special aptitude do to improve their pronunciation? What is their achievable goal?

Wong (1985) proposes that the major aspects of the spoken language system are stress, rhythm, and intonation. However, Jenkins (2001) argues that it is both unrealistic to expect learners to relinquish L1 transfer to the extent encouraged by most pronunciation manuals and teachers. She proposes a set of detailed core features both of segmentals and suprasegmentals based on her own interlanguage talk data, which is labeled the “Lingua Franca Core.” In view of teachability and learnability, she advises that the full range of suprasegmentals is necessary only when the learner will interact primarily with native speakers of English in the future, and when the learner wishes to sound like a native speaker for personal or professional reasons.

The goal for the participant in this study seems to be closer to Jenkins (2001) though it falls between Jenkins (2001) and Wong (1985). The participant is a highly motivated late adult learner of English who is aware that she has problems in her own pronunciation. The above studies show that learners improved their pronunciation by explicit instruction, so

she will make some progress. In order to give her a sense of achievement within a limitation of seven sessions over six weeks, the two vowels most frequently mispronounced in the initial diagnostic test were chosen, that is, /ɪ/ and /æ/. The research question was set: Will seven one-hour-long sessions produce any noticeable progress in the pronunciation of /ɪ/ and /æ/ within a Japanese learner of English?

Methodology

Participant

The participant is Yuri Furuta (a pseudonym). She is 19 years old, and her native language is Japanese. She is a freshman at Utsunomiya University. She has been studying English for over six years. She is an intermediate learner of English. Her TOEIC score was 490 eleven and a half months ago when she entered the university. She is a hardworking and highly motivated student. She thinks her pronunciation is bad and is willing to improve her pronunciation.

Yuri has studied English pronunciation at junior high school and high school as a regular student in class room settings. She has no experience of going abroad, or getting extra curriculum pronunciation instruction. This project will be her first experience to get one-to-one formal training in English pronunciation.

Apparatus

The diagnostic passage excerpted from Celce-Murcia, Brinton, and Goodwin (1996) was handed to the participant and she read the passage as the initial diagnostic test. Her reading was recorded and transcribed. The transcription is shown in Appendix A. In order to measure the degree of progress of the participant, she was given the same diagnostic passage and read it as the first activity in the last session. The transcription is shown in Appendix B.

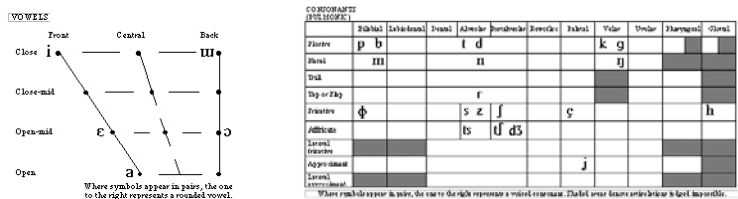
The performance of the participant in instructions was recorded, and 15-minute free conversation was also carried on and recorded in each session. The researcher didn't correct the pronunciation of the participant during free conversation in order to observe the degree of improvement in extemporaneous speech. An example of five-minute transcription is

shown in Appendix C.

Needs Analysis

Yuri had a typical Japanese accent in the initial diagnostic. Almost all English vowels she pronounced fell into the five vowels of Japanese. Figure 1 shows the five vowels of Japanese. She substituted /ɪ/ for /i/, /æ/ for /a/, /ʊ/ for /u/, and /ɜ:/ for /a:/. Among consonants, she had some problems in pronouncing /n/, /w/, /ð/, and /v/. Figure 1 also shows the consonants in Japanese.

Figure 1. Japanese Phonetic Inventory



The professional goal of the participant is to become a teacher of Japanese Language who has a museum curator's license. Though she has a dream of going to France or China, there will not be so many occasions for her to communicate in English once she becomes a teacher of Japanese Language in Japan. Therefore, she doesn't need to be perfect in pronunciation, though the improvement in English pronunciation may provide her with more job opportunities.

Correcting all kinds of mispronounced vowels is impossible due to time constraints of seven sessions, but focusing on two vowels may bring Yuri some improvement. /ɪ/ and /æ/ are the two vowels most frequently mispronounced in the initial diagnostic. Thus the focus of this project will be /ɪ/ and /æ/. Explanation and practice will be given only incidentally when communication is hindered by the mispronunciation of the other vowels, consonants, and suprasegmentals.

Procedure

Recording.

Individual recording sessions were held in a quiet vacant classroom where the

subject had taken classes in Integrated English I three times a week in the school year of 2009. Recordings were done using a digital voice recorder produced by SANYO Electric Co., Ltd. (the model number: ICR-B68) with the attached microphone. The recording mode was set in the High Quality Mode. The voice recorder was placed on the desk of the subject nearly 35 cm away from her mouth. The interviewer sat side by side at the next desk to the subject.

An overview of the sessions.

Table 1 shows the meeting schedule and activities conducted in this study. Forty-five-minute instructions were given, and then a 15-minute free conversation was conducted in each session. In the second session, two sets of pronunciation exercises with the minimal pairs of /t/ and /l/, and /æ/ and /ʌ/ were given to the participant. The differences of the two phonemes in each pair were explained to her. The vowel chart in relation to the inside of the mouth (Avery and Ehrlich, 1992, p.33) was also shown. The participant repeated words after the researcher, and when she mispronounced a word, she was corrected. The demonstration and practice with a mirror was given for the practice of /æ/ and /ʌ/.

Rising intonation practice from Prator and Robinett (1985, pp. 59, 63, and 64) was given in the second session. Two sets of Listen & Repeat exercises were done for both /t/ and /æ/ in the third and sixth sessions. Five phrases were given for each phoneme in a session. The participant repeated phrases after the researcher, and when mispronunciation was noticed, it was corrected.

Two sets of listening exercises were conducted in the fourth and fifth sessions. A short anecdote about Lincoln (Celce-Murcia, Brinton, and Goodwin, 1996, p. 229) was used for Session 4, and jokes (Wong, 1987, pp. 71-72) were read to the participant in Session 5. Each time she was given a handout (see Appendix D and E) and examined if there were unfamiliar words to her. She was encouraged to ask the researcher questions. Then she was told to circle words containing the target phoneme /t/ or /æ/, while the researcher was reading the passage. After finishing reading, the answers were checked. Finally, the participant practiced reading the passage after the researcher.

Contextualized exercises were done with two excerpts of transcription from free

conversation between the participant and the researcher in the fourth and fifth sessions, and anecdotes were given in the sixth session (Wong, 1987, pp. 72-74). When anecdotes were handed to the participant, she was encouraged to ask the researcher about unfamiliar words in the handouts. Then the researcher read one phrase, and the participant read the next phrase. They took turns to perform a round robin. In the first round, the researcher only checked the mispronounced words of the participant. No correction was made. After one anecdote was finished, the researcher pointed out the mispronounced parts and had the participant practice correct pronunciations. The second round was started from the participant, and she read different phrases from the first round.

The handouts excerpted from free conversation were given to the participant (see Appendix F). They were created just like regular dialogues between two people with a slight grammatical modification of the original transcription. No phonetic alphabet was written on the handouts. After checking unfamiliar words, the researcher read the lines of the interviewer, and the participant read the lines of Yuri. When the researcher perceived a mispronounced word, the participant was stopped and practiced the target pronunciation, understanding the explanation given by the researcher and listening to the model pronunciation.

Table 1. *Meeting Schedule and Activities*

Session (Date)	What was covered	Exercise done	Purpose
1 January 28 th 2010	5 minutes' diagnostic, arrangement of the schedule, & 15 minutes' free conversation	First diagnostic test from Prator and Robinett (1985)	To determine learner's difficulties
2 February 3 rd 2010	45 minutes' practice, & 15 minutes' free conversation	Minimal pair exercise 1 — /i/ vs. /ɪ/ from Prator and Robinett (1985, pp. 129-131) Rising intonation practice from Prator and Robinett (1985, pp. 59, 63, & 64)	To reassess learner difficulties, and reconfirm initial assessments To aid recognition & reproduction of /i/ vs. /ɪ/ & rising intonation

3 February 8 th 2010	45 minutes' practice, & 15 minutes' free conversation	Minimal pair exercise 2 — /ʌ/ vs. /æ/ from Prator and Robinett (1985, pp. 130-131, 142) — demonstration using a mirror Listen & repeat exercise 1 — /ɪ/ & /æ/	To aid recognition & reproduction of /æ/ vs. /ʌ/ To aid recognition & reproduction of /ɪ/
4 February 18 th 2010	45 minutes' practice, & 15 minutes' free conversation	Listening exercise 1 excerpted from Celce-Murcia et al. (1996, p. 229) Reading exercise excerpted from Free Conversation 1	To aid recognition of /ɪ/ & /æ/ in a context To aid reproduction of /ɪ/ & /æ/ with expressions of the learner herself
5 February 23 rd 2010	45 minutes' practice, & 15 minutes' free conversation	Listening exercise 2 excerpted from Wong (1987, pp. 71-72) Reading exercise excerpted from Free Conversation 3	To aid recognition of /ɪ/ & /æ/ in contexts To aid reproduction of /ɪ/ & /æ/ with expressions of the learner herself
6 March 3 rd 2010	45 minutes' practice, & 15 minutes' free conversation	Listen & repeat exercise 2 — /ɪ/ & / æ/. Reading exercise excerpted from Wong (1987, p. 73)	To aid recognition & reproduction of /ɪ/ To aid reproduction of /ɪ/ & /æ/ in contexts
7 March 9 th 2010	10 minutes' diagnostic, & 15 minutes' free conversation	First diagnostic test from Prator and Robinett (1985)	To determine how far the learner had progressed

Results and Discussion

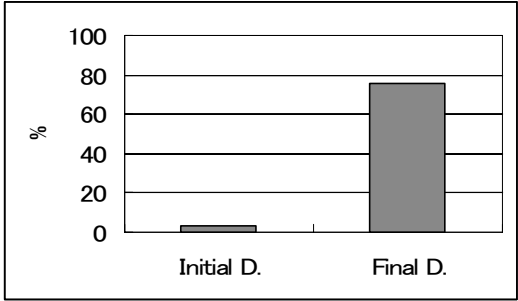
Progress in /ɪ/

During the treatment period of five weeks, the participant made noticeable progress in pronouncing /ɪ/. Figure 2 shows the percentages of the production of a correct /ɪ/ in the initial and final diagnostics. The correct production of /ɪ/ remarkably rose from 3.0% to 75.8%. There was also substantial progress with regards to the correct pronunciation of /ɪ/ during free conversation over the course of seven sessions. The learner began with an accuracy of 7.1%, and then dramatically climbed up to 66.7% in Session 3. The accuracy slightly decreased in Session 4 and Session 5, but it rose again in Session 6, and dropped

again in Session 7. Although Session 7 sees a decrease in accuracy, it should be noted that 29.6% in Session 7 is still higher than that 7.1% in Session 1 (see Figure 3).

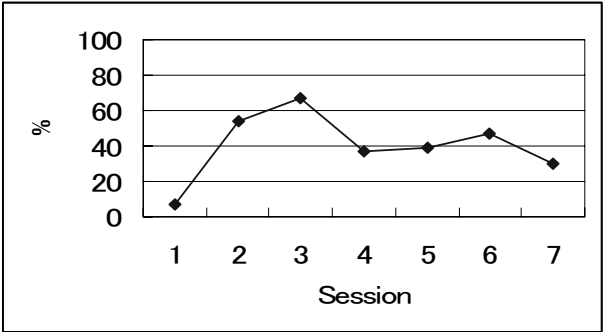
The participant was still on the way of development at the end of this project, but she made a remarkable progress in the production of /h/. At the start of this study, she did not have a habit of producing /h/ as a separate phoneme from /f/ consciously. Nevertheless, she achieved 75.8% of correct production of /h/ in the final diagnostic reading and performed 29.6% of correct production in the most difficult activity of free conversation of all conducted during the sessions.

Figure 2. Production of /h/ in the Initial and Final Diagnostic Tests



Note. D. = Diagnostic.

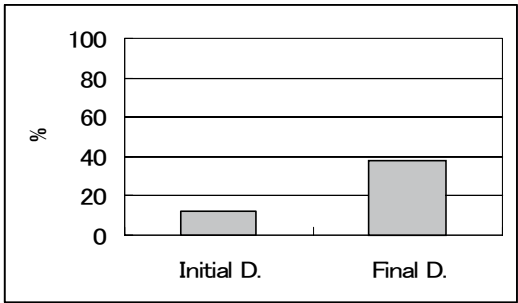
Figure 3. Production of /h/ in Free Conversation



Progress in /æ/

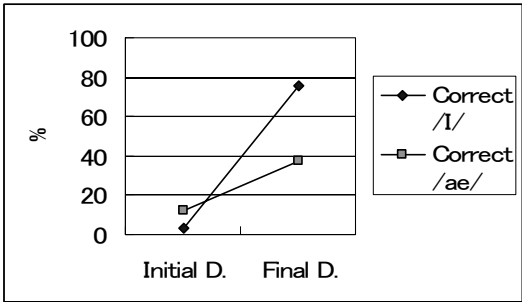
The participant made slight progress in pronouncing /æ/. Figure 4 shows the percentages of the production of a correct /æ/ in the initial and final diagnostics. The participant started with the accuracy of 12.5% in the initial diagnostic, and moderately raised it to 37.5% in the final diagnostic, which was not as high as 75.8% of the accuracy in /t/ (see Figure 5). The productions of a correct /æ/ in free conversation did not show a stable rise between Session 1 and Session 7 (see Figure 6). Except for Session 2, the number of the correct production was extremely small, that is, zero or one. Therefore, the percentages themselves depend on the number of obligatory occasions in sessions. The highest percentage was 25.0% in Session 4 in free conversation but she ends with 3.7% in Session 7, though she was serious in training and her developmental pronunciation increased. Figure 6 shows the accuracy of /æ/ stayed low in free conversation in all sessions as compared with /t/.

Figure 4. Productions of /t/ in the Initial and Final Diagnostic Tests



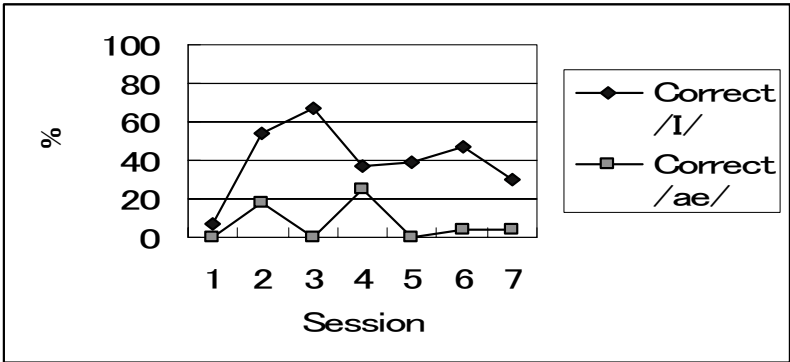
Note. D. = Diagnostic.

Figure 5. The Comparison of /ɪ/ and /æ/ in Initial and Final Diagnostic Tests



Note. D. = Diagnostic.

Figure 6. The Comparison of /ɪ/ and /æ/ in Free Conversation



With regard to /æ/, seven one-hour-long sessions did not produce noticeable progress. The participant produced only a slight progress in the pronunciation of /æ/. She started from 12.5% in the initial diagnostic and moderately improved her performance up to 37.5% in the final diagnostic.

The Correlation of Production and Listening Discrimination

The participant experienced great difficulty in producing a correct /æ/, but was the difficulty in production correlated with her difficulty in listening discrimination? The answer was no. The results of listening exercises are shown in Table 2. The percentage of

the correct perception of /æ/ in listening exercises was 82.4% in total. It is higher than that of the correct perception of /ɪ/ in total, that is, 66.7%. As far as production is concerned, Table 3 shows that the participant achieved much better results of /ɪ/ than those of /æ/. The results of listening discrimination were opposite: The participant attained better results of /æ/ than those of /ɪ/. The difficulty in pronunciation was not correlated with that of listening discrimination.

Just like the participant in this study, learners may be able to discriminate a certain phoneme, even when they cannot pronounce it correctly. Teachers should not underestimate the listening discrimination of learners only because their pronunciation underperforms their grammar, listening discrimination, or their ability to read.

Table 2. *The Results of Listening Exercises*

	/ɪ/		/æ/	
	Obligatory Oc.	Correct (%)	Obligatory Oc.	Correct (%)
Total	30	66.7	17	82.4

Note. Oc. = Occasion.

Table 3. *Correct Production of /ɪ/ and /æ/ in the Final Diagnostic*

	Production of Correct /ɪ/	Production of Correct /æ/
Final Diagnostic (%)	75.8	37.5

Conclusion

Based on the initial diagnostic, the research question of this study was posed: Will seven one-hour-long sessions produce any noticeable progress in the pronunciation of /ɪ/ and /æ/ within a Japanese learner of English? As far as /ɪ/ is concerned, seven one-hour-long sessions may produce a noticeable progress in pronouncing /ɪ/, though seven one-hour-long sessions may produce only a slight progress in pronouncing /æ/. Learners may be able to discriminate a certain phoneme, even when they cannot pronounce it correctly. If teachers are aware of the possible gap between a learner’s receptive skills and productive skills of vowels, it may help them make better plans for pronunciation instructions. Lastly,

teachers should remember that there is always a room for improvement whenever learners are motivated.

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Appendices

Appendix A: Transcription of Initial Diagnostic

(1) When a student from another country comes to study in the United States,
 [sʃʊdʒnt] [frʊmə] [in]
 he has to find out for himself the answers to many questions, and he has many
 → ↘ → ↘ [himsɜlf] [ʌnsəz] ↘
 problems to think about. (2) Where should he live? (3) Would it be better if he looked
 [əbəʊt] [ʃʊd] [liv] [ʊd] [it] [if] [lʊkt]
 for a private room off campus or if he stayed in a dormitory? (4) Should he spend all his
 [ʌ] ↘ [if] [in] → ↗ ↘ [ʃʊd]
 time just studying? (5) Shouldn't he try to take advantage of the many social and cultural
 ↘ ↘ [ʃʊdnt] [dʒə] [mʌni] [əndə]
 activities which are offered? (6) At first it is not easy for him to be casual in dress, informal
 ↘ [fa:st] [it][iz][nɒt] [him] [kʌʒʊəl] ↘ [infɔməl]
 in manner, and confident in speech. (7) Little by little he learns what kind of clothing is
 [in] ↘ [əndə] [kɒnfɪdʒnt] [in] [litəl] [litəl] [la:nz] [kloðɪŋ] [iz]
 usually worn here to be casually dressed for classes. (8) He also learns to choose the
 [wa:n] [hiə] [kʌʒʊəlɪ] [fɔ:] [hi] [la:nz] [ʃʊz] [dʒə]
 language and customs that are appropriate for informal situations. (9) Finally he begins to
 [lɑŋʒɪʃ] [əndə] [dʒʌt] [əprɒpɪət] [infɔməljʊ] [sʃɜ: ʃɔnz]
 feel sure of himself. (10) But let me tell you, my friend, this long-awaited feeling doesn't
 [ʃʊə][ʃʊv] → ↘ [bʌtə][lɜtə] [tɜlə] ↘ ↘ [ðɪs] [fɪlɪŋ]
 develop suddenly, does it. (11) All of this takes will power.
 [dɪvɜp] ↘ [dʌʒw][it] [ðɪs] [ˈwɪl][ˈpaʊə]

Appendix B: Transcription of Final Diagnostic

(1) When a student from another country comes to study in the United States,
 [sʃʊdʒnt]

he has to find out for himself the answers to many questions, and he has many

→ ↘ → ↘ [ˈhɪmsɛlf] ↘

problems to think about. (2) Where should he live? (3) Would it be better if he looked

[ˈː] [ˈː] [fʊd] [it] [lukt]

for a private room off campus or if he stayed in a dormitory? (4) Should he spend all his

[ɪn] [fʊd] [hɪz]

time just studying? (5) Shouldn't he try to take advantage of the many social and cultural

[ədʌŋtɪdʒ]

activities which are offered? (6) At first it is not easy for him to be casual in dress, informal

[əkʰtɪvɪtɪz] ↘ [ɪzi] [him] [kʌʒʊəl] [ɪn]

in manner, and confident in speech. (7) Little by little he learns what kind of clothing is

↘ [kənʃɪdənt] [ɪn] [lɪnz] [kloðɪŋ]

usually worn here to be casually dressed for classes. (8) He also learns to choose the

[wɔŋ] [hiə] [kʌʒʊəlɪ] [fɔ:] [klʌsɪz] [la: ɪz] [ʃʊz]

language and customs that are appropriate for informal situations. (9) Finally he begins to

[lɪŋɡɪʃ] [dzʌt] [sɪʃweɪʒɪz]

feel sure of himself. (10) But let me tell you, my friend, this long-awaited feeling doesn't

[fɪl] [fɪlɪŋ]

develop suddenly, does it. (11) All of this takes will power.

[dɪvɛləp] [sʌdɪŋli] [ɪt] [ˈː] [ˈː]

Appendix C: Transcription of Free Conversation 1

Interviewer: Do you sometimes listen to music in your room?

Yuri: I usually listen to Gekidan Shiki musical. Musical CD.

[ai] [lɪsn] [mjuʃɪkəlʊ][mjuʃɪkəlʊ]

Interviewer: What is your favorite musical?

Yuri: *Lion King*.

[kɪŋɔ]

Interviewer: I don't know what's exciting in *Lion King*. What is the good part of the musical *Lion King*?

Yuri: Main character Simba and Nala sing their love. The song title is *Can You Feel a Love*

[meŋ] [kʲəˈrʌktə] [siŋ] [lʌvʌ] [sɔŋɡw] [iz] [kæŋ] [lʌvʌ]

Tonight? It's very beautiful song.

[tənaitʌ][its]

Interviewer: So basically, it's a love story. Some adventure?

Yuri: Adventure and love, and...friendship.

[əndʌ] [lʌvʌ] [əndə] [frɛndʃipʌ]

Interviewer: I guess your parents also like musicals.

Yuri: No. My friend is, my friend like musical, and she takes me musical two years ago.

[frɛndə][iz] [frɛndə] [mjuʒikəl] [əndʌ][si] [mjuʒikəl]

And I saw the *Lion King*, I saw the musical at first. So my parents don't have much interest.

[əndʌ] [kiŋ] [mjuʒikəl][fa:st] [sə:][pɛrɛnts]

Interviewer: Your friend introduced you to musicals. So you actually have been to a musical theater and watched the show?

Yuri: Yes.

Appendix D: The Handout for Listening Exercise 1 (Celce-Murcia et al., 1996, p. 229)

— Session 4

Walking in the (woods) one day, /the famous (president, /Abraham (Lincoln, /
met a young (woman. / He (said, / “You are a very beautiful (lady.”/ In turn
(she) said / “You are the (ugliest man / I’ve ever (seen.”/ To which (Lincoln
replied, / “That may be (so)/ But you might have (lied)/ as(I) did.”

Appendix E: The Handout for Listening Exercise 2 (Wong, 1987, pp.71-72)

— Session 5

A. Before playing the following jokes, ask the students to mark: (a) where they think the pauses should go and (b) which words should be highlighted. Students can then check their guesses against the recorded version. Discuss their choices and help them puzzle out their questions.

1. The teacher asked a student, “John, name two pronouns.” John, who suddenly woke up, said, “Who, me?”

2. The teacher said, “Today, we will review our tenses. Now, if I say, ‘I am beautiful,’ what tense is it?” A student replied, “Obviously the past tense.”

3. A drunk walked up to a man and asked, “What time is it?” The man said, “It’s 11 o’clock.” The drunk said, “I must be going crazy. All day long I keep getting different answers.”

4. “We have everything on the menu today, sir,” the waiter said. “So I see,” said the customer. “May I have a clean one?”

5. A woman was standing on a railroad platform and overheard a man asking for a round-trip ticket. “To where?” asked the ticket agent. “To here, of course,” replied the man.

Appendix F: The Handout for Reading Exercise Excerpted From Free Conversation

3 — Session 5

Interviewer: You live close to Nasu, so you can go there anytime.

Student: I like Disney, so I go to Disneyland.

Interviewer: Wow. How often do you go to Disneyland?

Student: Recently one time, but three years ago, two times and three times.

Interviewer: Wow, two or three times a year, so many times. It’s always crowded, but you just wait until your turn comes in a long line?

Student: I like the parade and the show, so I’ve got on all attractions.

Interviewer: What kind of attraction do you recommend?

Student: Do you know “Haunted Mansion”? And “It’s a Small World.” I don’t like roller coasters. Slow pace attractions.

Interviewer: Yeah. Roller coasters are scary. I once happened to get on the Space Mountain. It was scary.

Student: Very scary. Space Mountain is very dark, so I don’t like it.

Interviewer: “It’s a Small World” was a safer attraction.

Student: Many dolls are very pretty, so I like it.

Interviewer: One of your classmates said cream cheese pretzels were delicious. I am not

sure in what area they are sold. It may be Toontown.

Student: Aika Sagawa?

Interviewer: Uh, yeah. People majoring in English went to Disneyland during winter vacation.

Student: I will go to Disneyland next week. I will eat that pretzel.

Interviewer: Try one. I think it's sweet not salty. How many of you are going to Disneyland? Yuki and Mami, too?

Student: No, my junior high school friend. My junior high school and high school friend.

Interviewer: One old junior high school and high school friend.

Student: I have known her since we were junior high school students.

Interviewer: You've been friends for many years. Only you and your friend are going.

Student: Yes. She is in Hokkaido now. She'll return to Nasu.

Interviewer: Oh, after a long separation, you can talk with her. You are going to Disneyland,

Appendix G1: The List of the Words in Which /t/ Was Correctly Pronounced (Free Conversation)

Session 1	environment (2) mandolin subject
Session 2	commit (2) in (3) instrument it it's is (5) literature (2) mandolin (5)
Session 3	decided didn't Disneyland in (5) it (4) it's live pretty since will
Session 4	didn't forgive is (4) it mandolin this will with
Session 5	in (5) increase interest[ing] is (8) it it's (3) meaning Minnie sing think things written
Session 6	delicious enjoyed elec[tri]cal in(2) is (3) isn't it it's minutes (3) mountain which wind
Session 7	expensive in interest(ing) is (7) isn't its language teaching this traveling

Note. The number of occurrences is in parentheses. The part of the word in brackets was not correctly pronounced.

**Appendix G2: The List of the Words in Which /t/ Was Not Correctly Pronounced
(Free Conversation)**

Session 1	classic classical didn't different gives in (4) interest interested (2) instrument (2) is (8) it it's (3) king (2) listen mandolin (4) Simba string warming music (4) musical (5) scholarship this until will
Session 2	dislike difficult give his in is (2) mandolin (5) mystery playing quit spring things will with
Session 3	big eating Disney music talking things
Session 4	English difficult (2) forgiven imagine interesting interview is (3) isn't will (2) with (4) winter
Session 5	did (2) didn't (2) drink Disneyland fish him imagine in (2) [interest]ing is (5) kids meaning Mickey reading returned sing sings six things which will with (2) written
Session 6	begins big didn't Disneyland [elec]trical give in (4) Inc. is (6) miniature navigate pin thing renewal six
Session 7	conditioner didn't difficult fifteen his in (6) [interest]ing is (13) it (4) it's (2) mathematics (5) Miss remember teaching thing (2) think this will with without (2)

Note. The number of occurrences is in parentheses. The part of the word in brackets was correctly pronounced.

**Appendix G3: The List of the Words in Which /æ/ Was Correctly Pronounced
(Free Conversation)**

Session 1	N/A
Session 2	character practice (4) tragedy
Session 3	N/A
Session 4	classes math
Session 5	N/A
Session 6	character
Session 7	traveling

Note. The number of occurrences is in parentheses.

**Appendix G4: The List of the Words in Which /æ/ Was Not Correctly Pronounced
(Free Conversation)**

Session 1	character classical France happy haven't natural tragedy
Session 2	chat grand grandmother piano practice (4)
Session 3	attraction crackers mansion snacks that
Session 4	actor imagine Japanese (2) last math
Session 5	character imagine Japanese Saturday
Session 6	attraction fast glasses hand last man mansion navigate pass pastel
Session 7	anniversary fact graduated graduates jacket Japanese language last man married mathematics pattern plan travel

Note. The number of occurrences is in parentheses.